

What is claimed is:

1. A safety guard to protect against inadvertent contact with an instrument having a sharp end, comprising:

a hollow base disposed on such instrument in advance of such sharp end, said base comprising at least one side lug, an opposing lug, and a side face, said side face including a hole;

a longitudinal member comprising a hinge end and a cover end, said hinge end hingedly connected to said base, said longitudinal member including two side walls and being of sufficient length to cover such sharp end and having a longitudinal slot wider than such sharp end, said opposing lug being disposed and shaped to fit into said longitudinal slot when said safety guard is in a closed position, said longitudinal member further comprising a protrusion at said hinge end, said protrusion being of such shape to be held between said at least one side lug and said opposing lug when said safety guard is in a closed position; and

a permanent locking mechanism comprising a rear locking tab attached to one of said side walls of said longitudinal member and a front locking tab attached to the other of said side walls of said longitudinal member, said front locking tab disposed between said rear locking tab and said longitudinal slot.

2. The safety guard of claim 1, wherein said rear locking tab has a trapezoidal cross section and said front locking tab has a trapezoidal cross section.

3. The safety guard of claim 2, wherein said front locking tab is offset from said rear locking tab in a direction transverse to said longitudinal slot.

4. The safety guard of claim 3, wherein said front locking tab and said rear locking tab overlap in said transverse direction.

5. The safety guard of claim 1, wherein said at least one side lug is shaped such that said at least one side lug functions as a snap catch to lock said protrusion in place when said safety guard is in a closed position.

6. The safety guard of claim 1, wherein said longitudinal member further comprises an opening lip disposed at said cover end.

7. The safety guard of claim 1, further comprising a hinge that connects said longitudinal member to said base, said hinge comprising a microscopic helical structure.

8. The safety guard of claim 7, wherein said base is composed of a polymeric material, said longitudinal member is composed of said polymeric material, and said microscopic helical structure is sheathed in said polymeric material.

9. The safety guard of claim 1, wherein said instrument is attached to a support from which a plurality of wings protrudes, at least a portion of said support being enclosed within said base.

10. The safety guard of claim 9, wherein at least four equally spaced wings protrude from said support.

11. The safety guard of claim 10, wherein said base comprises a top surface through which said support protrudes.

12. The safety guard of claim 1, wherein said instrument is a venipuncture needle.

13. A safety guard to protect against inadvertent contact with a venipuncture needle having a sharp end, comprising:

a base disposed on such venipuncture needle in advance of such sharp end, said base comprising at least one side lug and an opposing lug;

a longitudinal member comprising a hinge end and a cover end, said hinge end hingedly connected to said base, said longitudinal member including two side walls and being of sufficient length to cover such sharp end and having a longitudinal slot wider than such sharp end, said opposing lug being disposed and shaped to fit into said longitudinal slot when said safety guard is in a closed position, said longitudinal member further comprising a protrusion at said hinge end, said protrusion being of such shape to be held between said at least one side lug and said opposing lug when said safety guard is in a closed position, said venipuncture needle having a bevel at its sharp end oriented to face more than 90° away from said longitudinal slot when said safety guard is in the closed position; and

a permanent locking mechanism comprising a locking tab attached to said longitudinal member.

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14. The safety guard of claim 13, wherein said locking tab has a trapezoidal cross section.

15. The safety guard of claim 13, wherein said at least one side lug is shaped such that said at least one side lug functions as a snap catch to lock said protrusion in place when said safety guard is in a closed position.

16. The safety guard of claim 13, wherein said longitudinal member further comprises an opening lip disposed at said cover end.

17. The safety guard of claim 13, further comprising a hinge that connects said longitudinal member to said base, said hinge comprising a microscopic helical structure.

18. The safety guard of claim 17, wherein said base is composed of a polymeric material, said longitudinal member is composed of said polymeric material, and said microscopic helical structure is sheathed in said polymeric material.

19. The safety guard of claim 13, wherein said base is hollow and further comprises a side face that contains a hole.

20. The safety guard of claim 13, wherein said base is hollow and said venipuncture needle is attached to a well from which at least four equally spaced wings protrude, at least a portion of said well being enclosed within said base.

21. The safety guard of claim 20, wherein said base comprises a top surface through which said well protrudes.

22. The safety guard of claim 13, wherein said bevel is oriented to face substantially 180° away from said longitudinal slot when said safety guard is in the closed position.

23. The safety guard of claim 13, wherein said venipuncture needle is the needle of a hypodermic syringe.

24. The safety guard of claim 13, wherein said venipuncture needle is a blood collection needle.

25. A permanent locking mechanism for a safety guard, wherein said safety guard comprises a longitudinal member that includes two side walls and a longitudinal slot, comprising:

- a rear locking tab attached to one of said side walls; and
- a front locking tab attached to the other of said side walls.

26. The permanent locking mechanism of claim 25, wherein said rear locking tab has a trapezoidal cross section and said front locking tab has a trapezoidal cross section.

Sub 27. The permanent locking mechanism of claim 26, wherein said front locking tab is offset from said rear locking tab in a direction transverse to said longitudinal slot.

28. The permanent locking mechanism of claim 27, wherein said front locking tab and said rear locking tab overlap in said transverse direction.

29. A safety guard to protect against inadvertent contact with a venipuncture needle having a sharp end, comprising:

- a hollow base disposed on such venipuncture needle in advance of such sharp end, said base comprising at least one side lug, an opposing lug, a top surface, and a side face, said side face including a hole;

- a longitudinal member comprising a hinge end and a cover end, said hinge end hingedly connected to said base, said longitudinal member including two side walls and being of sufficient length to cover such sharp end and having a longitudinal slot wider than such sharp end, said opposing lug being disposed and shaped to fit into said longitudinal slot when said safety guard is in a closed position, said longitudinal member further comprising a protrusion at said hinge end, said protrusion being of such shape to be held between said at least one side lug and said opposing lug when said safety guard is in a closed position, said venipuncture needle having a bevel at its sharp end oriented to face more than 90° away from said longitudinal slot when said safety guard is in the closed position;

- a hinge that connects said longitudinal member to said base, said hinge comprising a microscopic helical structure; and

- a permanent locking mechanism comprising a rear locking tab with a trapezoidal cross section attached to one of said side walls of said longitudinal member and a front locking tab with a trapezoidal cross section attached to the other of said side walls of said longitudinal member, said front locking tab disposed between said rear locking tab and said

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longitudinal slot and offset from and overlapping said rear locking tab in a direction transverse to said longitudinal slot;

said venipuncture needle being attached to a well from which at least four equally spaced wings protrude, with at least a portion of said well enclosed within said base and said well protruding though said top surface of said base.

30. The safety guard of claim 29, wherein said base is composed of a polymeric material, said longitudinal member is composed of said polymeric material, and said microscopic helical structure is sheathed in said polymeric material.

31. The safety guard of claim 29, wherein said bevel is oriented to face substantially 180° away from said longitudinal slot when said safety guard is in the closed position.

32. The safety guard of claim 29, wherein said at least one side lug is shaped such that said at least one side lug functions as a snap catch to lock said protrusion in place when said safety guard is in a closed position.

33. The safety guard of claim 29, wherein said venipuncture needle is the needle of a hypodermic syringe.

34. The safety guard of claim 29, wherein said venipuncture needle is a blood-collection needle.

35. A safety guard to protect against inadvertent contact with an instrument having a sharp end, comprising:

a hollow base disposed on such instrument in advance of such sharp end, said base comprising at least one side lug, an opposing lug, and a side face, said side face including a hole;

a longitudinal member comprising a hinge end and a cover end, said hinge end hingedly connected to said base, said longitudinal member being of sufficient length to cover such sharp end and having a longitudinal slot wider than such sharp end, said opposing lug being disposed and shaped to fit into said longitudinal slot when said safety guard is in a closed position, said longitudinal member further comprising a protrusion at said hinge end, said protrusion being of such shape to be held between said at least one side lug and said opposing lug when said safety guard is in a closed position; and

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a permanent locking mechanism comprising a locking tab attached to the interior of said longitudinal member.

36. The safety guard of claim 35, wherein said longitudinal member further comprises an opening lip disposed at said cover end.

37. The safety guard of claim 35, further comprising a hinge that connects said longitudinal member to said base, said hinge comprising a microscopic helical structure.

38. The safety guard of claim 35, wherein said at least one side lug is shaped such that said at least one side lug functions as a snap catch to lock said protrusion in place when said safety guard is in a closed position.

39. The safety guard of claim 38, wherein said base is composed of a polymeric material, said longitudinal member is composed of said polymeric material, and said microscopic helical structure is sheathed in said polymeric material.

40. The safety guard of claim 35, wherein said instrument is attached to a support from which a plurality of wings protrudes, at least a portion of said support being enclosed within said base.

41. The safety guard of claim 40, wherein at least four equally spaced wings protrude from said support.

42. The safety guard of claim 41, wherein said base comprises a top surface through which said support protrudes.

43. The safety guard of claim 35, wherein said instrument is a venipuncture needle.

44. A method for protecting against contact with an instrument having a sharp end comprising providing a safety guard comprising:

a base disposed on such venipuncture needle in advance of such sharp end, said base comprising at least one side lug and an opposing lug;

a longitudinal member comprising a hinge end and a cover end, said hinge end hingedly connected to said base, said longitudinal member including two side walls and being of sufficient length to cover such sharp end and having a longitudinal slot wider than

such sharp end, said opposing lug being disposed and shaped to fit into said longitudinal slot when said safety guard is in a closed position, said longitudinal member further comprising a protrusion at said hinge end, said protrusion being of such shape to be held between said at least one side lug and said opposing lug when said safety guard is in a closed position, said venipuncture needle having a bevel at its sharp end oriented to face more than 90° away from said longitudinal slot when said safety guard is in the closed position; and

a permanent locking mechanism comprising a locking tab attached to said longitudinal member; and

moving said longitudinal member into a position covering said sharp end.

45. The method according to claim 44, wherein said locking tab has a trapezoidal cross section.

46. The method according to claim 44, wherein said at least one side lug is shaped such that said at least one side lug functions as a snap catch to lock said protrusion in place when said safety guard is in a closed position.

47. The method according to claim 44, wherein said longitudinal member further comprises an opening lip disposed at said cover end.

48. The method according to claim 44, wherein said safety guard further comprises a hinge that connects said longitudinal member to said base, said hinge comprising a microscopic helical structure.

49. The method according to claim 44, wherein said base is hollow and further comprises a side face that contains a hole.

50. The method according to claim 44, wherein said base is hollow and said venipuncture needle is attached to a well from which at least four equally spaced wings protrude, at least a portion of said well being enclosed within said base.

51. The method according to claim 44, wherein said bevel is oriented to face substantially 180° away from said longitudinal slot when said safety guard is in the closed position.